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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/047,681	01/14/2002	Kuan-Sheng Hsieh	JCLA7793	5281

7590 03/16/2004  
J.C. Patents, Inc.  
Suite 250  
4 Venture  
Irvine, CA 92618

EXAMINER
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MITCHELL, JAMES M

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 03/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/047,681

Applicant(s)

HSIEH, KUAN-SHENG

Examiner

James M. Mitchell

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6, 8-12, 14-16, 18 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-12, 14-16 and 18 is/are rejected.
- 7) ☐ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/8/2003</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayes et al. (US 5,736,074).

Hayes (Col. 8-9, Lines 55-26) discloses a bonded anisotropic conductive film, comprising: a resin material (109); and a plurality of conductive particles (108) dispersed in the resin material, wherein one or-more conductive particle includes a solder material covered with an outermost flux layer; wherein the solder material includes lead-tin alloy and encapsulates an inherent conductive bead (middle portion of solder bead).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hozumi (JP406275123A) as applied to claim 1 and further in combination with Akram et al. (US 6,492,738).

Hozumi does not appear to show that the polymer is a thermosetting resin.

However, Akram (Col. 5, Lines 46-48) utilizes a polymer thermosetting resin.

It would have been obvious to one of ordinary skill in the art to incorporate a thermosetting polymer resin around the particles of Hayes in order to provide a polymer as required by Hayes (109).

Claims 4-6, and 8-12, 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hozumi (JP406275123A) in combination with Hayes et al. (US 5,736,074).

Hozumi (Fig 4, 6, 8, 13b) disclose a bonded anisotropic conductive film, ACF, comprising: a thermal set (Abstract) plastic material (via capable of being molded) capable of hardening at a first temperature; and a plurality of conductive particles forming within the plastic material (Fig 6) wherein each conductive particle has a gold conductive bead (8; Jap. Par. 0022), a bonding layer (10, via bonded to 11) and an insulation layer (11), wherein the bonding layer is comprised of a conductive material and forms a spherical structure that covers the surface of the conductive bead, such that the bonding layer includes a conductive bead, and wherein the insulating layer forms an outermost covering layer of each of said conductive bead, and wherein the bonding layer inherently melts at a second temperature (via metal) and the second temperature is higher than the first temperature; and a flip chip package having a bonded ACF inherently inserted (via its physically between) between a silicon chip (14; Jap. Par. 0039) with a plurality of first contact points (9) and a carrier ("substrate"; 15)

that has a plurality of second contact points (9) that form a common metallic bond through the bonding layer of conductive particles within the bonded ACF.

Hozumi does not appear to disclose that the bonding layer comprises lead-tin.

However Hozumi discloses the same invention except that bonding layer is Au instead of lead-tin, Hayes (Col. 8-9, Lines 55-26) shows that lead-tin and Au are equivalent metallic materials known in the art known in the art to form conductive spheres. Therefore, because the two metal are art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute lead-tin for gold to form conductive spheres.

#### ***Allowable Subject Matter***

Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not disclose or make obvious forming a conductive particle including a gold conductive bead encapsulated in solder with a flux covering the outermost layer dispersed in a resin including all the limitations of the independent claim. While Hayes discloses the use of both gold and solder as a conductive sphere, it explicitly discloses that the sphere is **one** material in contrast to applicant's invention that claims the sphere is gold encapsulated by solder.

#### ***Response to Arguments***

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

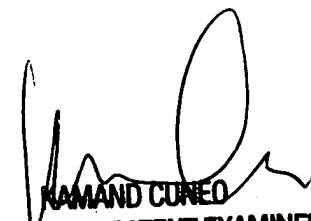
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Mitchell whose telephone number is (571) 272-1931. The examiner can normally be reached on M-F 6:30-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jmm



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